2004 Freshwater Emergent Noxious and Quarantine Weed Water Quality Group Monitoring Plan Results

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INTORDUCTION

The purpose of this monitoring program is to record any residual concentrations of the aquatic herbicides that are used to treat various freshwater emergent noxious and quarantine weed species in or near the waters of Washington State.

Herbicide application treatments that were monitored occurred between June 28th and October 18th, 2004. All treatments were conducted by applicators licensed by the Washington State Department of Agriculture. Two sites in King County and one site each in Pacific, Skamania and Yakima counties were sampled before and after herbicide treatment with glyphosate, imazapyr or triclopyr. Freshwater emergent noxious weeds were the targets of these applications. Boat mounted power equipment and manually operated backpack sprayers were used for application. Some of the sites were located near flowing water along rivers and creeks and some were located near the relatively slow moving water along lakeshores. Six sites were sampled for glyphosate residue in 2003. 2004 was the first year that imazapyr and triclopyr were used under WSDA's NPDES permit.

For more information on sampling procedures and protocols see the *2004 Annual Group Monitoring Plan for Herbicide Application to Freshwater Emergent Noxious and Quarantine Weeds performed under the Noxious Weed National Pollutant Discharge Elimination System (NPDES) Permit* available at:

www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/noxious/monitoring_data/2004%20emergent_monitoring_plan.pdf

RESULTS

Laboratories accredited by the Washington State Department of Ecology were used for the analysis of all samples. In 2004, Edge Analytical, Inc. from Burlington Washington and Anatek Labs, Inc. from Moscow Idaho were used for analysis of the monitoring samples. Analytical Method Number EPA 547 was used for all glyphosate samples; Analytical Method Number EPA 8151A was used for imazapyr samples and Analytical Method Number EPA 515.1 was used for the triclopyr samples. The sampling information and resultant laboratory results are reported below. All detectible levels of herbicide are reported in micrograms per liter (ug/L). One microgram per liter equals one part per billion (ppb). "ND" indicates that herbicide residue was not detected above the listed practical quantitation limit (PQL). The PQL is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions (Edge Analytical, Inc.)

Site #1

On June 28, 2004, 0.5 acres of yellow flag iris plants on the shores of Spring Lake in King County were treated with a 1.5% solution of glyphosate using boat mounted power equipment. As there were detectible residue samples in two separate treatments in 2003, this site was sampled again. The total treatment area was spread out over 3 to 4 acres. The applications were made by a commercial applicator. WSDA staff collected the monitoring samples. It should be noted that in 2003 yellow flag iris, purple loosestrife and fragrant water lily plants were treated. This year the populations of purple loosestrife and fragrant water lily had been reduced enough that it was possible to control them manually without the use of herbicide. This reduced the acres treated from 3 to 0.5.

Sample Time	Results
2.5 hours before treatment	ND
1 hour after treatment	50 ug/L
24 hours after treatment	ND

Table1. Spring Lake treatment site results.

Site #2

On August 4, 2004, an area of approximately 0.25 acres of Japanese knotweed was treated along the margins of the Naches River, just east of the city of Naches. A 1% solution of imazapyr was applied with a hand held backpack sprayer. The Yakima County Noxious Weed Control Board staff and scientists from BASF Corporation made the applications. Staff from the Washington State Department of Agriculture collected the monitoring samples.

Sample Time	Results
0.1 hours before treatment	ND
1 hour after treatment	ND
24 hours after treatment	ND

Table 2. Naches River knotweed treatment site results.

Site #3

On August 18, 2004, approximately 0.25 acres of garden loosestrife plants on Foster Island in King County were treated with a 1.5% solution of triclopyr. The applications were made by staff from the University of Washington using a canoe-mounted sprayer. Washington State Department of Agriculture staff conducted the monitoring.

Sample Time	Results
1 hour before treatment	ND
1 hour after treatment	3.6 ug/L
24 hours after treatment	2.6 ug/L

Table 3. Foster Island garden loosestrife treatment site.

Site #4

On August 31, 2004, approximately 12.2 acres of Japanese knotweed plants growing along the Willapa River in Pacific County were treated with a tank mix of 2% glyphosate and 0.5% imazapyr using pressurized spray equipment. Staff from the Pacific County Noxious Weed Control Board applied the mixture. Monitoring samples were taken by staff from the Washington State Department of Agriculture. The collected samples were analyzed for imazapyr only.

Sample Time	**Results**
1 hour before treatment	ND
1 hour after treatment	ND
24 hours after treatment	2.2 ug/L

Table 4. Willapa River treatment site results.

Site #5

On October 18, 2004, a total of 6,498 square feet of Japanese knotweed plants along Little Creek in Skamania County were injected with glyphosate. The injections were made by staff from the Skamania County Noxious Weed Control Board. Monitoring samples were taken by staff from the Washington State Department of Agriculture.

Sample Time	**Results**
1 hour before treatment	ND
1 hour after treatment	50 ug/L
24 hours after treatment	10 ug/L

Table 5. Little Creek knotweed injection treatment site results.

Attachment A.

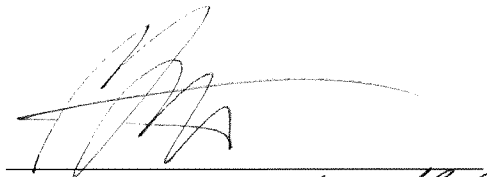
2004 Freshwater Emergent Monitoring Results

Included separately

Attachment B.

Signatory Page

I certify under penalty of law, that this document and all attachments were prepared under my direction, or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiries of the person or persons who manage the system, or those persons directly responsible for gathering information, in information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



BRAD WHITE, PEST PROGRAM MGR
WSDA 29, Jun '05